CLAIMS

1. An isolated nucleic acid encoding a protein molecule shown in SEQ ID NO. 1.

2. An isolated nucleic acid molecule encoding a protein molecule, the function of which is to protect cells against degeneration and/or cell death, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof.

3. An isolated nucleic acid molecule of claim 1 or 2, wherein the nucleic acid molecule is a D N A molecule.

4. An isolated nucleic acid molecule of claim 3, wherein the nucleic acid molecule is a cD N A molecule, in particular a cD N A molecule comprising a nucleotide sequence shown in SEQ ID NO. 2.

5. An isolated D N A molecule capable of hybridizing with the complement of the cD N A described in SEQ ID NO. 2 under stringent condition.

6. An isolated D N A molecule of claim 5 encoding a protein molecule, the function of which is to protect cells against degeneration and/or cell death.

7. An isolated nucleic acid molecule of claim 2 or 5 encoding a protein molecule, the function of which is to protect cells of the nerve system, muscular system, prostate, stomach, testis, ovary, adrenal glands, mammary glands, liver, spleen, lung, trachea or placenta against degeneration and/or cell death.

8. A vector comprising a nucleic acid molecule according to one of claims 1 to 7.

9. A vector according to claim 8 wherein said vector is a plasmid, a virus or a bacteriophage.

10. A plasmid according to claim 9 wherein said plasmid is adapted for expression in a yeast cell and further comprises the regulatory elements necessary for expression of said nucleic acid molecule.

11. A plasmid according to claim 9 wherein said plasmid is adapted for expression in a bacterial cell and further comprises the regulatory elements necessary for expression of said nucleic acid molecule.

12. A plasmid according to claim 8 wherein said plasmid is adapted for expression in a mammalian cell and further comprises the regulatory elements necessary for expression of said nucleic acid molecule.

13. A cell transformed with a nucleic acid molecule according to one of claims 1 to 7, wherein said cell is in particular a bacterial cell, a yeast cell, a mammalian cell, or an insect cell.

14. A protein molecule shown in SEQ ID NO.1.

15. A protein molecule, the function of which is to protect cells against degeneration and/or cell death, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof.

16. A protein molecule of claim 14, the function of which is to protect cells of the nerve system, muscular system, prostate, stomach, testis, ovary, adrenal glands, mammary glands, liver, spleen, against degeneration and/or cell death.

17. An antibody specifically immunoreactive with an immunogen, wherein said immunogen is a protein molecule shown in SEQ ID NO. 1.

18. An antibody specifically immunoreactive with a protein molecule, the function of which is to protect cells against degeneration and/or cell death, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO. 1 or a functional variant thereof.

19. A method of detecting pathological cells in a subject which comprises immunocyto-chemically staining cells with an antibody of claim 17 or 18, wherein a low degree of staining in said cell compared to a cell representing a known health status indicates a pathological change of said cells.

20. A method of claim 19, wherein cells of the nerve system, muscular system, prostate, stomach, testis, ovary, adrenal glands, mammary glands, liver, spleen, lung, trachea or placenta are used.

21. A method of diagnosing or prognosing a disease, in particular a neurological disease, in a subject comprising:

   determining a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of

   (b)   a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

   (b)   a transcription product of a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

   (c)   a protein molecule wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

   (d)   a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(e)   a transcription product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(f)   a translation product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(g)   a molecule affecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (f),

(h)   a molecule which is affected in its level, or its activity, or both its level and activity, by at least one substance which is selected from the group consisting of (a) to (f),

and comparing said level, or said activity, or both said level and said activity, of at least one of said substances (a) to (h) to a reference value representing a known disease or health status, thereby diagnosing or prognosing a disease, in particular a neurological disease, in said subject.

22. A method of monitoring the progression of a disease, in particular a neurological disease, in a subject, comprising:

determining a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of

(a)   a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(b)   a transcription product of a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(c)   a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(d)   a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(e)   a transcription product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(f)   a translation product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(g)   a molecule affecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (f),

(h)   a molecule which is affected in its level, or its activity, or both its level and activity, by at least one substance which is selected from the group consisting of (a) to (f),

and comparing said level, or said activity, or both said level and said activity, of at least one of said substances (a) to (h) to a reference value representing a known disease or health status, thereby monitoring progression of a disease, in particular a neurological disease, in said subject.

23. A method of evaluating a treatment for a disease, in particular a neurological disease, in a subject, said method comprising:

determining a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of

(a)   a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(b)   a transcription product of a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(c)   a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(d)   a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(e)   a transcription product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(f)   a translation product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(g)   a molecule affecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (f),

(h)   a molecule which is affected in its level, or its activity, or both its level and activity, by at least one substance which is selected from the group consisting of (a) to (f),

and comparing said level, or said activity, or both said level and said activity, of at least one of said substances (a) to (h) to a reference value representing a known disease or health status, thereby evaluating a treatment for a disease, in particular a neurological disease, in said subject.

24. The method according to one of claims 21 to 23, wherein the function of said protein molecule or a variant thereof is to protect cells from degeneration and/or cell death.

25. The method according to one of claims 21 to 24, wherein a decrease of a level or an activity of (i) a transcription product of a D N A molecule encoding a protein molecule, the amino acid sequence of which comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof or (ii) a protein molecule, the amino acid sequence of which comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof, in a sample from said subject relative to a reference value representing a known health status indicates the presence of a disease, in particular a neurological disease, in said subject.

26. The method according to one of claims 21 to 25, wherein said D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2

encodes a protein molecule, the function of which is to protect cells against degeneration and/or cell death.

27. The method according to one of claims 21 to 26, wherein said subject suffers from Alzheimer's disease or related neurofibrillary disorders, or neurodegenerative states characterized by cell degeneration or cell death, or Parkingson's disease, or Huntington disease, or Amyotrophic lateralsclerosis or Pick's disease.

28. An agent which affects an activity, or level, or both said activity and level, of at least one substance which is selected from the group consisting of

(a)   a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(b)   a transcription product of a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(c)   a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(d)   a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(e)   a transcription product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(f)   a translation product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(g)   a molecule affecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (f),

(h)   a molecule which is affected its level, or its activity, or both its level and activity, by at least one substance which is selected from the group consisting of (a) to (f).

29. An agent of claim 28, wherein the function of said protein molecule or a variant thereof is to protect cells from degeneration and/or cell death.

30. An agent of claim 28 or 29 wherein said D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 encodes a protein molecule, the function of which is to protect cells against degeneration and/or cell death.

31. A medicament comprising an agent according to one of claims 28 to 30.

32. Use of an agent for preparation of a medicament for treating or preventing a neurological disease, in particular Alzheimer's disease, which agent affects an activity, or level, or both said activity and level, of at least one substance which is selected from the group consisting of

(a)   a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(b)   a transcription product of a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(c)   a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(d)   a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(e)   a transcription product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(f)   a translation product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(g)   a molecule affecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (f),

(h)   a molecule which is affected in its level, or its activity, or both its level and activity, by at least one substance which is selected from the group consisting of (a) to (f).

33. Use of an agent according to claim 32, wherein the function of said protein molecule or a variant thereof is to protect cells from degeneration and/or cell death.

34. Use of an agent according to claim 32 or 33, wherein said D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 encodes a protein molecule, the function of which is to protect cells against degeneration and/or cell death.

35. A method of identifying an agent that affects an activity, or level, or both said activity and level, of at least one substance which is selected from the group consisting of

(a)   a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(b)   a transcription product of a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(c)   a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(d)   a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(e)   a transcription product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(f)   a translation product of a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(g)   a molecule affecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (f),

(h)   a molecule which is affected in its level, or its activity, or both its level and activity, by at least one substance which is selected from the group consisting of (a) to (f),

comprising the steps of:

(i)   providing a sample containing at least one substance which is selected from the group consisting of (a) to (f),

(ii)   contacting said sample with at least one agent,

(iii)   comparing an activity, or level, or both said activity and level, of at least one of said substances before and after contacting.

36. A method of claim 35 wherein the function of said protein molecule or a variant thereof is to protect cells from degeneration and/or cell death.

37. A method of claim 35 or 36 wherein said D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 encodes a protein molecule, the function of which is to protect cells against degeneration and/or cell death.

38. A kit for diagnosis, or prognosis of a disease, said kit comprising:

(1) at least one reagent which is selected from the group consisting of reagents that selectively detect

(a)   a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(b)   a transcription product of a D N A molecule encoding a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(c)   a protein molecule, wherein the amino acid sequence of the protein molecule comprises the sequence shown in SEQ ID NO.1 or a functional variant thereof,

(d)   a D N A molecule capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(e)   a transcription product of a D N A molecule, wherein said D N A molecule is capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(f)   a translation product of a D N A molecule, wherein said D N A molecule is capable of hybridizing with the complement of the c D N A described in SEQ ID NO. 2 under stringent conditions,

(g)   a molecule affecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (f),

(h)   a molecule which is affected in its level, or its activity, or both its level and activity, by at least one substance which is selected from the group consisting of (a) to (f),

(2) instructions for diagnosing, or prognosing said disease by

(i)   detecting a level, or an activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (h) in a sample from said subject; and

(ii)   diagnosing, or prognosing said disease, wherein a varied level, or activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (h) compared to a reference value representing a known health status; or a level, or activity, or both said level and said activity, of at least one substance which is selected from the group consisting of (a) to (h) similar or equal to a

reference value representing a known disease status indicates diagnosis, or prognosis of said disease.